

What is claimed is:

1) A contact activated vacuum assisted suction cup assembly comprising:

1) a cylindrical bellowed or corrugated cup defining a plurality of interconnected bellows or corrugations of alternating, coaxial large and small diameter areas, said bellowed cup having;

A) an open contact end; and

B) a valve end including a valve seat;

2) a valve stem having first and second extremities;

3) a valve plate intermediate said open contact end and said valve end in one of said large diameter areas attached to said first extremity; and

4) a valve stop attached to said valve stem at said second extremity said valve stop being of a size to engage said valve seat.

2) The contact activated vacuum assisted suction cup assembly of claim 1 wherein said valve plate includes apertures therein for the passage of a vacuum.

3) The contact activated vacuum assisted suction cup assembly of claim 2 wherein said valve stop includes a central threaded aperture, said valve stem is threaded and said valve stop is threaded onto said valve stem.

- 4) The contact activated vacuum assisted suction cup assembly of claim 2
wherein said valve end includes a peripheral flange about said valve end.**

- 5) The contact activated vacuum assisted suction cup assembly of claim 4
wherein said peripheral flange is integral with said valve end.**

- 6) A picking device comprising:**

A) a vacuum plenum fed by a vacuum inlet;

B) a plurality of plenum apertures in said vacuum plenum; and

**C) in said plenum apertures, contact activated vacuum assisted
suction cup assemblies comprising:**

**i) a cylindrical bellowed or corrugated cup defining a plurality
of interconnected bellows or corrugations of alternating,**

**coaxial large and small diameter areas, said bellowed cup
comprising;**

A) an open contact end; and

**B) a valve end including a valve seat and a peripheral
flange for engagement with said plenum apertures;**

ii) a valve stem having first and second extremities;

**iii) a valve plate intermediate said open contact end and
said valve end in one of said large diameter areas
attached to said first extremity; and**

iv) a valve stop attached to said valve stem at said second extremity said valve stop being of a size to engage said valve seat.

5 7) The picking device of claim 6 wherein said valve plate includes apertures therein for the passage of a vacuum.

8) The picking device of claim 7 wherein said valve stop includes a central threaded aperture, said valve stem is threaded and said valve stop is
10 threaded onto said valve stem.

9) The contact activated vacuum assisted suction cup assembly of claim 4 wherein said peripheral flange is integral with said valve end.

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